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UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 C.F.R. § 1.53(b))

Attorney Docket No. 500.37136CX1

First Inventor or Application Identifier Yutaka NAGAI et al

Title See 1 in Addendum

Express Mail Label No. _____

PTO/SB/05 (4/98)
Approved for use through 09/30/2000 OMB 0651-0032
Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

11/16/00

APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

1. * Fee Transmittal Form (e.g., PTO/SB/17)
(Submit an original and a duplicate for fee processing)

2. Specification [Total Pages 23]
(preferred arrangement set forth below)

- Descriptive title of the Invention
- Cross References to Related Applications
- Statement Regarding Fed sponsored R & D
- Reference to Microfiche Appendix
- Background of the Invention
- Brief Summary of the Invention
- Brief Description of the Drawings (if filed)
- Detailed Description
- Claim(s)
- Abstract of the Disclosure

3. Drawing(s) (35 U.S.C. 113) [Total Sheets 4]

4. Oath or Declaration [Total Pages 2]
 a. Newly executed (original or copy)
 b. Copy from a prior application (37 C.F.R. § 1.63(d))
(for continuation/divisional with Box 16 completed)

- i. DELETION OF INVENTOR(S)
Signed statement attached deleting inventor(s) named in the prior application, see 37 C.F.R. §§ 1.63(d)(2) and 1.33(b).

NOTE FOR ITEMS 1 & 13 IN ORDER TO BE ENTITLED TO PAY SMALL ENTITY FEES, A SMALL ENTITY STATEMENT IS REQUIRED (37 C.F.R. § 1.27), EXCEPT IF ONE FILED IN A PRIOR APPLICATION IS RELIED UPON (37 C.F.R. § 1.28).

16. If a **CONTINUING APPLICATION**, check appropriate box, and supply the requisite information below and in a preliminary amendment
 Continuation Divisional Continuation-in-part (CIP) of prior application No 09/290,251
 Prior application information: Examiner N. Rosen Group / Art Unit 2764

For **CONTINUATION** or **DIVISIONAL APPS** only: The entire disclosure of the prior application, from which any oath or declaration is supplied under Box 4b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

17. CORRESPONDENCE ADDRESS

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Name (Print/Type)	McKinvin Kraus	Registration No. (Attorney/Agent)	22,466
Signature	<i>Yutaka Nagai</i>	Date	Nov. 16, 2000

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Attachment to PTO/SB/05 (4/98) Utility Patent Application
Transmittal

1. REPRODUCTION APPARATUS AND REPRODUCTION METHOD OF DIGITAL VIDEO SIGNAL OR AUDIO SIGNAL

JC69 U.S. PTO
09/12/97
11/16/00

FEE TRANSMITTAL

for FY 2000

Patent fees are subject to annual revision
Small Entity payments must be supported by a small entity statement,
otherwise large entity fees must be paid. See Forms PTO/SB/09-12
See 37 CFR §§ 1.27 and 1.28

TOTAL AMOUNT OF PAYMENT (\$950.00)

Complete if Known

Application Number	November 16, 2000
Filing Date	
First Named Inventor	Yutaka NAGAI et al
Examiner Name	
Group / Art Unit	
Attorney Docket No.	500.37136CX1

METHOD OF PAYMENT (check one)

The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to

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Under 37 CFR §§ 1.16 and 1.17

2. Payment Enclosed:

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FEE CALCULATION (continued)

3. ADDITIONAL FEES

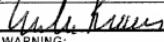
Large Entity	Small Entity	Fee	Fee	Fee	Fee Description	Fee Paid
Code (\$)	Code (\$)	Code (\$)	Code (\$)	Code (\$)		
105	130	205	65	65	Surcharge - late filing fee or oath	0.00
127	50	227	25	25	Surcharge - late provisional filing fee or cover sheet	0.00
139	130	139	130	130	Non-English specification	0.00
147	2,520	147	2,520	2,520	For filing a request for reexamination	0.00
112	920*	112	920*	920*	Requesting publication of SIR prior to Examiner action	0.00
113	1,840*	113	1,840*	1,840*	Requesting publication of SIR after Examiner action	0.00
115	110	215	55	55	Extension for reply within first month	0.00
116	380	216	100	100	Extension for reply within second month	0.00
117	870	217	435	435	Extension for reply within third month	0.00
118	1,360	218	680	680	Extension for reply within fourth month	0.00
126	1,850	228	925	925	Extension for reply within fifth month	0.00
119	300	219	150	150	Notice of Appeal	0.00
120	300	220	150	150	Filing a brief in support of an appeal	0.00
121	260	221	130	130	Request for oral hearing	0.00
138	1,510	138	1,510	1,510	Petition to institute a public use proceeding	0.00
140	110	240	55	55	Petition to revive - unavoidable	0.00
141	1,210	241	605	605	Petition to revive - unintentional	0.00
142	110	242	605	605	Utility issue fee (or reissue)	0.00
143	430	243	215	215	Design issue fee	0.00
144	580	244	260	260	Plant issue fee	0.00
122	130	122	130	130	Petitions to the Commissioner	0.00
123	50	123	50	50	Petitions related to provisional applications	0.00
126	240	126	240	240	Submission of Information Disclosure Stmt	0.00
561	40	581	40	40	Recoing each patent assignment per property (times number of properties)	0.00
146	690	246	345	345	Filing a submission after final rejection (37 CFR § 1.129(b))	0.00
149	690	249	345	345	For each additional invention to be examined (37 CFR § 1.129(c))	0.00
Other fee (specify) _____						0.00
Other fee (specify) _____						0.00
SUBTOTAL (3) (\$ 0.00)						

*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$ 0.00)

SUBMITTED BY

Complete if applicable

Name (Print/Type) **Mcwin Kraus**Registration No. (Attorney/Agent) **22,466**Telephone **703-312-6600**Signature Date **Nov. 16, 2000**

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REPRODUCTION APPARATUS AND REPRODUCTION METHOD
OF DIGITAL VIDEO SIGNAL OR AUDIO SIGNAL

CROSS REFERENCE TO RELATED APPLICATION

This is a continuation of U.S. application Serial No. 5 09/290,251, filed April 13, 1999, the subject matter of which is incorporated by reference herein.

BACKGROUND OF THE INVENTION

The present invention relates to a reproduction apparatus for a signal recorded on a medium such as an optical storage medium, and in particular to a technique making it possible to 10 protect a copyright of the signal recorded on the medium.

A digital video disk (DVD) for recording an audio/video (AV) signal compressed by using MPEG2 has a problem that the AV signal could be copied without quality degradation because the AV signal is handled as digital data.

In opposition to this, there has been introduced a technique of an electronic watermark for superimposing information such as permission, inhibition, or permission of only one generation as to copying so that the user may not 20 sense it as described in Nikkei Electronics, February 24, 1997, pp. 99 - 123. In the above described technique, there is described, for example, a method for conducting copying prevention processing on analog output in accordance with a detected signal.

In the case of a medium such as a broadcasting which 25 permits copying only once, however, it is not considered to protect a copyright by restricting reproduction, using a

player of each user, of a pirated edition disk which is produced by copying a signal onto a DVD-R disk (capable of recording the signal once) or the like and thereafter further copying the signal from the DVD-R disk to a DVD-ROM.

5 SUMMARY OF THE INVENTION

Assuming that copying is permitted only once in broadcasting or the like, an object of the present invention is to provide a technique for preventing a pirated edition disk which is produced by recording a signal onto a DVD-R disk (capable of recording the signal once), a DVD-RAM disk (rewritable), or the like and thereafter illegally copying the recorded signal to a DVD-ROM, from being reproduced by an ordinary user's player capable of reproducing DVD-ROM, DVD-R and DVD-RAM disks.

Another object of the present invention is to report the cause of the reproduction stoppage to the user correctly in the case where reproduction is inhibited.

Originally, a medium allowing copying only once does not exist in DVD-ROM disks. In other words, it is impossible in DVD-ROMs to detect information which has permitted copying of only one generation, from video data. In the case where a signal from a medium permitting copying only once, such as broadcasting, is recorded on a recordable medium such as DVD-R/RAM and the recorded signal is copied onto a DVD-ROM to produce a pirated edition, information which has permitted copying of only one generation is detected from the video data. Therefore, in accordance with an aspect of the present invention, a means for identifying whether a disk is a DVD-R,

5 a DVD-RAM, or a DVD-ROM, and a means for detecting
superimposed or embedded information concerning permission of
copying from video data are provided. If the disk is a
DVD-ROM and information identifying that copying of one
10 generation has been permitted, such as an electronic watermark
and copying protect cryptographic information is detected,
then reproduction from the disk is inhibited, the reason of
the reproduction stoppage is provided. So, the fact that the
reproduction has been stopped due to a copyright problem is
15 reported to the user. As a result, the above described
objects are achieved.

20 BRIEF DESCRIPTION OF THE DRAWING

25 FIG. 1 is a block circuit diagram of a DVD reproduction
apparatus showing a first embodiment of the present invention;

30 FIG. 2 is a block circuit diagram of a DVD reproduction
apparatus showing a second embodiment of the present
invention;

35 FIG. 3 is a block circuit diagram of a DVD reproduction
apparatus showing a third embodiment of the present invention;

40 and

45 FIG. 4 is a block circuit diagram of a DVD reproduction
apparatus showing a fourth embodiment of the present
invention.

50 DESCRIPTION OF THE EMBODIMENTS

55 A first embodiment of the present invention will now be
described by referring to the drawing.

60 FIG. 1 is a block diagram of a DVD reproduction apparatus
showing an embodiment of the present invention. Numeral 101

denotes a DVD-ROM disk, a DVD-R disk, or a DVD-RAM disk having video data or the like recorded thereon. In the present embodiment, video data or audio data having copying permission information superimposed thereon or embedded therein is recorded in each of the above described disks. The superimposed copying permission information cannot be altered without significantly degrading the quality of the original video data or audio data. A disk identification code (a code for identifying whether the disk is a disk dedicated for reproduction) is further added to the video data or audio data. Numeral 102 denotes an optical pickup for detecting a signal from the disk 101. Numeral 103 denotes a preamplifier for conducting amplification, waveform equalization, and the like on a signal detected by the optical pickup. Numeral 104 denotes a demodulation circuit for converting a reproduced signal to binary values and conducting bit synchronization and demodulation. Numeral 105 denotes a RAM for temporarily storing the reproduced data thus demodulated. Numeral 106 denotes an error correction circuit for conducting error correction processing on data demodulated and stored in the RAM 105. Numeral 107 denotes a detection circuit for detecting a disk identification code recorded on the disk together with the video data or the like. Numeral 108 denotes a detection circuit for detecting superimposed copying permission information from the video data. Numeral 109 denotes a circuit for generating a disk reproduction stopping signal 114 from the detected identification code and the copying permission information. If the disk reproduction

stopping signal 114 has been generated, then the error
correction circuit 106 destroys data instead of correcting
data, and simultaneously generates a flag 118 indicating that
an error is incorrectable. Numeral 110 denotes a message
5 information generation circuit for generating video data (such
as characters or an illustration) or an audio signal
indicating that the reproduction is impossible. Numeral 111
denotes a selection circuit for selecting either data
subjected to correction processing stored in the RAM 105 or
10 message information supplied from the message information
generation circuit, in accordance with the disk reproduction
stopping signal 114. Numeral 112 denotes an output control
circuit for conducting timing control and the like to output
data from the selection circuit 111. Numeral 113 denotes a
data output terminal. Numeral 115 denotes an interface for a
microcomputer. Numeral 121 denotes a microcontroller for
controlling a signal processing device 120 formed of
components 104, 105, 106, 107, 108, 109, 110, 111, 112, 114
and 115. Numeral 122 denotes a data/signal transfer bus among
20 the demodulation circuit 104, the RAM 105, the error
correction circuit 106, the detection circuits 107 and 108,
and the selection circuit 110.

Reproduction from a disk in the present DVD reproduction
apparatus will hereafter be described.

25 A signal recorded on the disk 101 is converted to an
electric signal by the pickup 102. The electric signal is
subjected in the preamplifier 103 to amplification and
waveform equalization. Thereafter, in the demodulation

5 circuit 104, the reproduced signal is converted to binary values, and subjected to bit synchronization and demodulation. The reproduced data thus demodulated is temporarily stored in the RAM 105. The stored data is subjected to error correction processing in the error correction circuit 106. The reproduced data thus corrected is sent to the copying permission information detection circuit 108. The copying permission information detection circuit 108 detects the superimposed copying permission information from the 10 reproduced data. The copying permission information indicates which of the following types the recorded data is:

1) copying is possible; 2) copying is inhibited; and 3) copying of only one generation was permitted.

This detected information is sent to the disk reproduction stopping signal generation circuit 109. The disk identification code detection circuit detects the disk identification code added to the video data or audio data, and sends a result to the disk reproduction stopping signal generation circuit 109. The disk identification code identifies 1) a disk dedicated to reproduction, or 2) a recordable disk. If the copying permission information represents "copying of only one generation was permitted" and the disk identification code is judged to be a disk dedicated to reproduction, then the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active. Upon the disk reproduction stopping signal 114 becoming active, the error correction circuit 106 destroys 20 the reproduced data stored in the RAM and sends a flag 25

indicating that error is incorrectable to the microcontroller
115. Upon the disk reproduction stopping signal 114 becoming
active, the message information generation circuit 110
generates video or audio message data indicating that the
5 reproduction has been stopped due to violation of copying
consent. The above described message information may include
where to make contact with a copyright managing organization
(such as its telephone number, address, and the like).

The message information generation circuit 110 may be a
10 ROM or the like storing generated data. Normally, the
selection circuit 111 selects reproduced data read out from
the RAM. When the disk reproduction stopping signal 114 is
active, the selection circuit 111 selects the message
information supplied from the message information generation
circuit 110.

As heretofore described, in the present embodiment, it is
possible to inhibit reproduction of a pirated edition disk
which is produced by temporarily recording a video signal or
an audio signal from broadcasting which may be permitted to be
20 copied by only one generation onto a DVD-R or DVD-RAM, and
then copying the video signal or the audio signal onto a
DVD-ROM on the basis of the DVD-R or DVD-RAM.

Furthermore, by outputting the message signal, users can
recognize that the reproduction inhibition is not caused by a
25 failure of the reproduction apparatus or a damage of the disk,
but caused by a problem of the copyright. In addition, by
displaying where to make contact with the copyright managing
organization, it is possible to collect information for

identifying a person who produced the pirated edition from users. Furthermore, in the case of a violation of a copyright, destruction of data is also conducted. In the case where the signal processing device 120 is formed as a single semiconductor chip, therefore, data is destroyed and cannot be read out, even if software of the micro-controller is falsified and correction impossibility flag is disregarded.

If the disk reproduction stopping signal 114 in the disk reproduction stopping signal generation circuit 109 is made active, provided that the copying permission information indicates "copying of only one generation was permitted" and the disk identification code is judged to be a disk dedicated to reproduction or provided that the copying permission information is "copying is inhibited" and the disk identification code is judged to a recordable disk, then a DVD-R/RAM produced by illegally recording contents of a disk inhibited from being copied can also be prevented from being reproduced. According to the present embodiment, a reproduction apparatus capable of sufficiently protecting a copyright can be provided.

A second embodiment of the present invention will now be described.

FIG. 2 is a block diagram of a DVD reproduction apparatus showing the second embodiment.

The disk 101 reproduced in the present embodiment is intended for a DVD-ROM, a DVD-R, or a DVD-RAM. Among them, groove-shaped tracks are wobbled in the DVD-RAM/R. Therefore, a push-pull signal for tracking is modulated by the wobble.

· This wobble is required to effect tracking at the time of recording, and it does not exist in the disk dedicated to reproduction.

5 The present embodiment is the same as the first embodiment except the following three points:

1) A wobble detection circuit 116 is provided;
2) A push-pull signal terminal is provided in the preamplifier 103, and it is connected to the wobble detection circuit 116; and

10 3) When the wobble detection circuit 116 has judged that there is no wobbling, or when the disk identification code detection circuit 107 has judged the disk to be a disk dedicated to reproduction and simultaneously therewith the copying permission information detection circuit 108 has judged that copying of only one generation was permitted, the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active.

20 In the present embodiment, at the same time that data is reproduced in the same way as the first embodiment, wobble detection is conducted by the wobble detection circuit 116. When either the wobble detection circuit 116 or the disk identification code detection circuit 107 has judged the disk to be a disk dedicated to reproduction and simultaneously therewith the copying permission information detection circuit 108 has judged that copying of only one generation was permitted, the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active. Even if the disk identification code is rewritten,

therefore, reproduction is inhibited certainly.

As heretofore described, in the present embodiment, it is possible to inhibit reproduction of a pirated edition disk which is produced by temporarily recording a video signal or an audio signal from broadcasting which may be permitted to be copied by only one generation onto a DVD-R or DVD-RAM, and then copying the video signal or the audio signal onto a DVD-ROM on the basis of the DVD-R or DVD-RAM. In the present embodiment, detection of a pirated edition is conducted certainly by judging the disk to be a disk dedicated to reproduction provided that there is no wobble or provided that the identification code indicates a disk dedicated to reproduction. Even if the condition that the identification code indicates a disk dedicated to reproduction is removed from the decision conditions, however, the same effects as the those of the first embodiment are obtained.

A third embodiment of the present invention will now be described by referring to drawing.

FIG. 3 is a block diagram of a DVD reproduction apparatus showing the third embodiment.

The present embodiment is the same as the first embodiment except the following three points:

- 1) A reflectance identification circuit 117 for processing reflectance information of a disk derived by the preamplifier 103 is provided;
- 2) A terminal for outputting information of the reflectance is provided in the preamplifier 103, and the terminal is connected to the reflectance identification

circuit 117; and

3) When the reflectance identification circuit 117, the wobble detection circuit 116, or the disk identification code detection circuit 107 has judged the disk to be a disk
5 dedicated to reproduction and simultaneously therewith the copying permission information detection circuit 108 has judged that copying of only one generation was permitted, the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active.

10 At the same time that data is reproduced in the same way as the second embodiment, reflectance information is sent from the preamplifier 103 to the reflectance identifying circuit 117 in the present embodiment. The reflectance identifying circuit 117 has a threshold value for the reflectance and identifies a disk yielding a reflectance value which is equal to or larger than the threshold value, as a disk dedicated to reproduction.

15 When the reflectance identifying circuit 117, the wobble detection circuit 116, or the disk identification code
20 detection circuit 107 has judged the disk to be a disk dedicated to reproduction and simultaneously therewith the copying permission information detection circuit 108 has judged that copying of only one generation was permitted, the disk reproduction stopping signal generation circuit 109 makes the disk reproduction stopping signal 114 active.

25 Even if the disk identification code is rewritten, reproduction is inhibited certainly. In the present embodiment, detection of a pirated edition is conducted

certainly by judging the disk to be a disk dedicated to reproduction provided that the reflectance is equal to or larger than the threshold value, provided that there is no wobble, or provided that the identification code indicates a disk dedicated to reproduction. Even if the disk is judged to be a disk dedicated to reproduction provided that some combination of the three conditions is satisfied, however, the same effects as the those of the first embodiment are obtained.

10 A fourth embodiment of the present invention will now be described by referring to drawing.

FIG. 4 is a block diagram of a DVD reproduction apparatus showing the fourth embodiment.

Instead of inputting the output of the message information generation circuit 110 to the selection circuit 111 and inputting the output of the selection circuit 111 to the output control circuit 112, the output of the message information generation circuit 110 is written into the RAM 105 via a RAM write controller 119. Components other than them are common to the third embodiment. In the case where the disk reproduction stopping signal 114 has become active, overwriting is conducted on video data or audio data which should be originally outputted in the present embodiment. As a result, there are obtained the same effects as those of the case where the output of the message information generation circuit 110 is inputted to the selection circuit 111 and the output of the selection circuit 111 is inputted to the output control circuit 112 as in the second embodiment.

Furthermore, in the first to fourth embodiments, the message information for the user is generated in the reproduction apparatus. However, the same effects are also obtained by providing a terminal for outputting the disk
5 reproduction stopping signal 114, sending the disk reproduction stopping signal 114 to a video data display apparatus, an audio output apparatus, a compressed video data or audio data decompression apparatus, or the like, and causing the apparatus receiving the disk reproduction stopping
10 signal 114 to generate the message information.

As heretofore described, reproduction is inhibited according to the present invention in the case where the copying permission information superimposed on the video signal or embedded therein indicates that copying of only one generation was permitted and the disk is judged to be a DVD-ROM. As a result, it is possible to inhibit reproduction from a disk which is produced by temporarily recording video or audio data permitted as to copy of one generation onto a DVD-R/RAM and thereafter illegally copying the recorded data
20 to a DVD-ROM. In addition, in the case where reproduction is inhibited, the cause of the reproduction stoppage can be reported to the user correctly.

Throughout these embodiments, function operation of the circuit for detecting the copying permission information and the disk type, the reproduction stopping signal generation circuit, and the like can be effected by execution of them in a processor in a program form. Therefore, at least a part of the circuit configuration can be implemented in a software
25

fashion by execution, in the processor, of a program stored in memories.

WHAT IS CLAIMED IS:

1. A reproduction apparatus for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said video data and/or audio data being generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, said reproduction apparatus comprising:

demodulating means for demodulating data modulated in accordance with said modulation rule;

temporal store means for holding the data demodulated by said demodulating means;

error-correcting means for error-correcting the demodulated data stored in said temporal store means based on the error correction code, the error-corrected data being stored in said temporal store means;

20 reproducing means for reproducing the superimposed information concerning copying consent from the error-corrected demodulated data processed by said error-correcting means and stored in said temporal store means; and

25 output control means for performing output control of the reproduced data based on said reproduced information concerning copying consent stored in the temporal store means.

2. A reproduction apparatus for reproducing video data and/or audio data according to claim 1, wherein said temporal store means is a RAM.

5 3. A reproduction apparatus for reproducing video data and/or audio data according to claim 2, wherein said demodulating means, said error-correcting means and said copying consent information reproduction means are connected to said RAM, respectively.

10 4. A reproduction apparatus for reproducing video data and/or audio data according to claim 3, wherein said RAM is constituted by a single RAM.

15 5. A reproduction apparatus for reproducing video data and/or audio data according to claim 2, wherein said copying consent information reproducing means, said demodulating means, said error-correcting means and said RAM are integrated in a single semiconductor device.

20 6. A reproduction apparatus for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said data and/or audio data being generated by superimposing information concerning copying consent on a 25 digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted

for the recording medium, said reproduction apparatus comprising:

demodulating means for demodulating data modulated in accordance with said modulation rule;

5 a temporal store means for holding the data demodulated by said demodulating means;

error-correcting means for error-correcting the demodulated data stored in said temporal store means based on an error correction code, the error-corrected data being 10 stored in said temporal store means;

reproducing means for reproducing the superimposed information concerning copying consent from the error-corrected video data and/or audio data processed by said error-correcting means and stored in said temporal store means; and

means for stopping reproduction of the error-corrected video data and/or audio data in accordance with the information concerning copying consent from said copying consent information reproducing means;

20 wherein said demodulating means, said temporal store means, said error-correcting means, said copying consent information reproducing means and said reproduction stopping means are integrated in a single semiconductor device.

25 7. A reproduction apparatus for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said video data and/or audio data being

generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, said reproduction apparatus comprising:

5 a demodulator which demodulates data modulated in accordance with said modulation rule;

10 a temporal store which holds the data demodulated by said demodulator;

15 an error-corrector which for error-corrects the demodulated data stored in said temporal store based on the error correction code, the error-corrected data being stored in said temporal store;

20 a reproducer which for reproduces the superimposed information concerning copying consent from the error-corrected demodulated data processed by said error-corrector and stored in said temporal store; and

25 an output controller which performs output control of the reproduced data based on said reproduced information concerning copying consent stored in the temporal store.

8. A reproduction apparatus for reproducing video data and/or audio data according to claim 7, wherein said temporal store is a RAM.

9. A reproduction apparatus for reproducing video data and/or audio data according to claim 8, wherein said

demodulator, said error-corrector and said copying consent information reproducer are connected to said RAM, respectively.

5 10. A reproduction apparatus for reproducing video data and/or audio data according to claim 9, wherein said RAM is constituted by a single RAM.

10 11. A reproduction apparatus for reproducing video data and/or audio data according to claim 2, wherein said copying consent information reproducer, said demodulator, said error-corrector and said RAM are integrated in a single semiconductor device.

15 12. A reproduction apparatus for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said data and/or audio data being generated by superimposing information concerning copying consent on a 20 digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, said reproduction apparatus comprising:

25 a demodulator which demodulates data modulated in accordance with said modulation rule;
 a temporal store which holds the data demodulated by said demodulator;

an error-corrector which error-corrects the demodulated data stored in said temporal store based on an error correction code, the error-corrected data being stored in said temporal store;

5 a reproducer which reproduces the superimposed information concerning copying consent from the error-corrected video data and/or audio data processed by said error-corrector and stored in said temporal store; and

10 a reproduction stopper which stops reproduction of the error-corrected video data and/or audio data in accordance with the information concerning copying consent from said copying consent information reproducer;

wherein said demodulator, said temporal store, said error-corrector, said copying consent information reproducer and said reproduction stopper are integrated in a single semiconductor device.

13. A method for reproducing from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said data and/or audio data being generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has been undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, in a reproduction apparatus comprising a demodulator which demodulates in accordance with said modulation rule; a temporal store which holds the data demodulated by said

demodulator; an error-corrector which for error-corrects the demodulated data stored in said temporal store based on the error correction code; a reproducer which for reproduces the superimposed information concerning copying consent from said 5 video data and/or audio data; and an output controller which controls an output of the apparatus, said method comprising the steps:

demodulating modulated data by said demodulator;

temporarily storing the demodulated data in said temporal 10 store;

error-correcting the demodulated data stored in said temporal store means by said error-corrector to provide error-corrected demodulated data;

reproducing the superimposed information concerning copying consent from said error-corrected demodulated data stored in said temporal store by said copying consent information reproducer; and

performing output control of the apparatus by said output controller in accordance with the information concerning 20 copying consent reproduced by said copying consent information reproducer.

14. A method for reproducing from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon, said data and/or audio data being generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has been undergone addition of an error correction code

for error correction and then modulated in accordance with a modulation rule adapted for the recording medium, in a reproduction apparatus comprising demodulating means for demodulating in accordance with said modulation rule; a
5 temporal store means for holding the data demodulated by said demodulating means; error-correcting means for error-correcting the demodulated data stored in said temporal store means based on the error correction code; reproducing means for reproducing the superimposed information concerning
10 copying consent from said video data and/or audio data; and output control means for controlling an output of the apparatus, said method comprising the steps:
demodulating modulated data by said demodulation means;
temporarily storing the demodulated data in said temporal store mean;
error-correcting the demodulated data stored in said temporal store means by said error-correcting means to provide error-corrected demodulated data;
reproducing the superimposed information concerning
20 copying consent from said error-corrected demodulated data stored in said temporal store means by said copying consent information reproducing means; and
performing output control of the apparatus by said output control means in accordance with the information concerning
25 copying consent reproduced by said copying consent information reproducing means.

ABSTRACT OF THE DISCLOSURE

A reproduction apparatus and method for reproducing video data and/or audio data from a medium dedicated to reproduction and/or a recordable medium having video data and/or audio data recorded thereon. The video data and/or audio data is generated by superimposing information concerning copying consent on a digitized video signal or audio signal which has undergone addition of an error correction code for error correction and then modulated in accordance with a modulation rule adapted for the recording medium. The reproduction apparatus includes a demodulator for demodulating data modulated in accordance with the modulation rule, a temporal store for holding the data demodulated by the demodulator, an error-corrector for error-correcting the demodulated data stored in the temporal store, based on an error correction code with the error-corrected data being stored in the temporal store. A reproducer reproduces the superimposed information concerning copying consent from the error-corrected demodulated data processed by the error-corrector and stored in the temporal store and an output controller performs output control of the reproduced data based on the reproduced information concerning copying consent stored in the temporal store.

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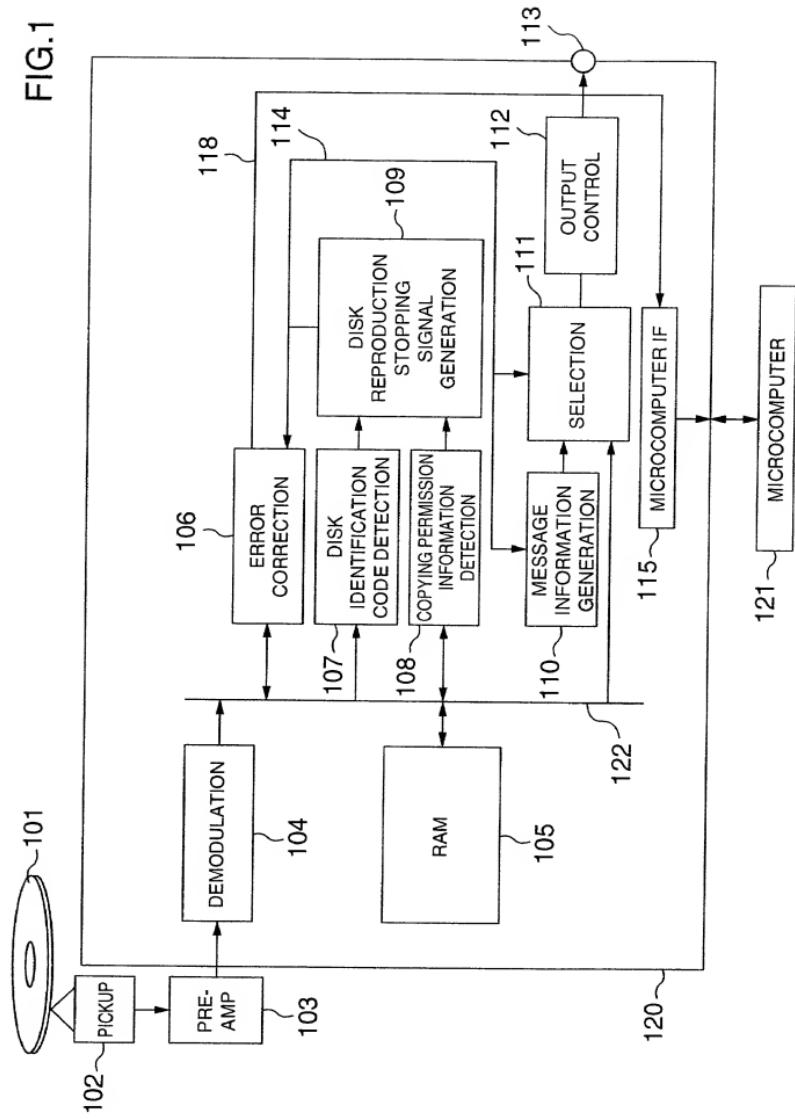


FIG. 2

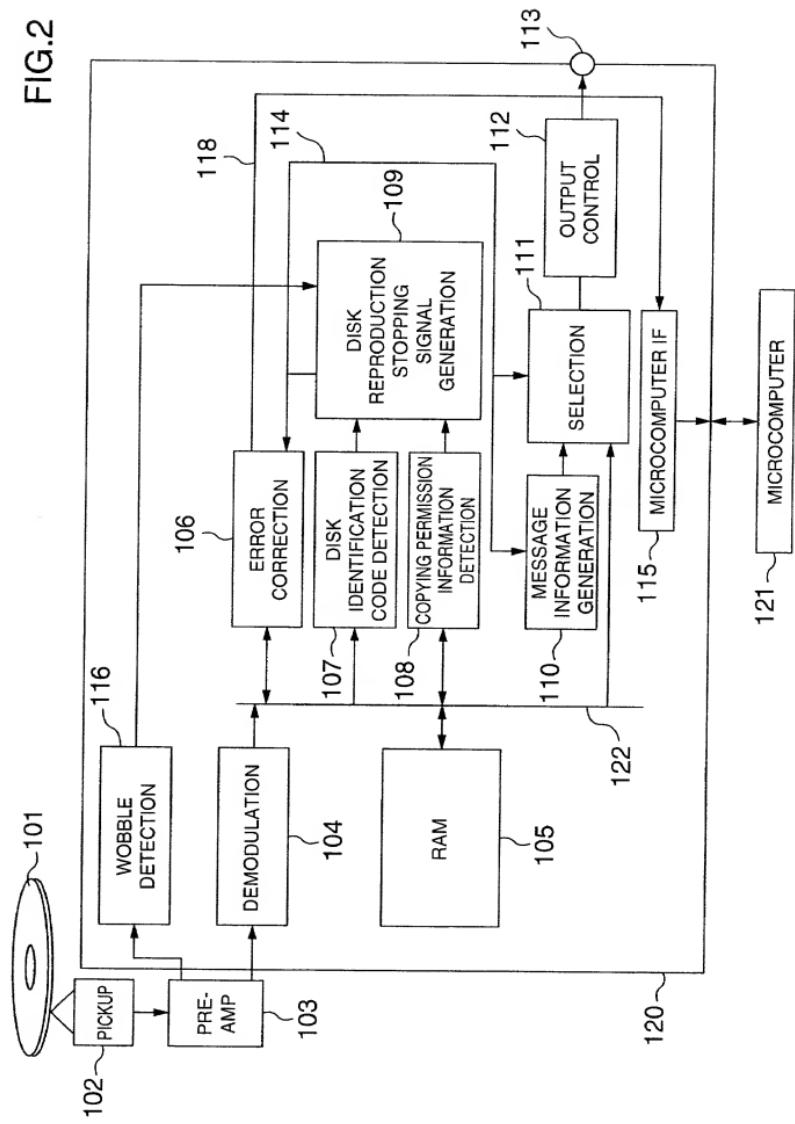


FIG. 3

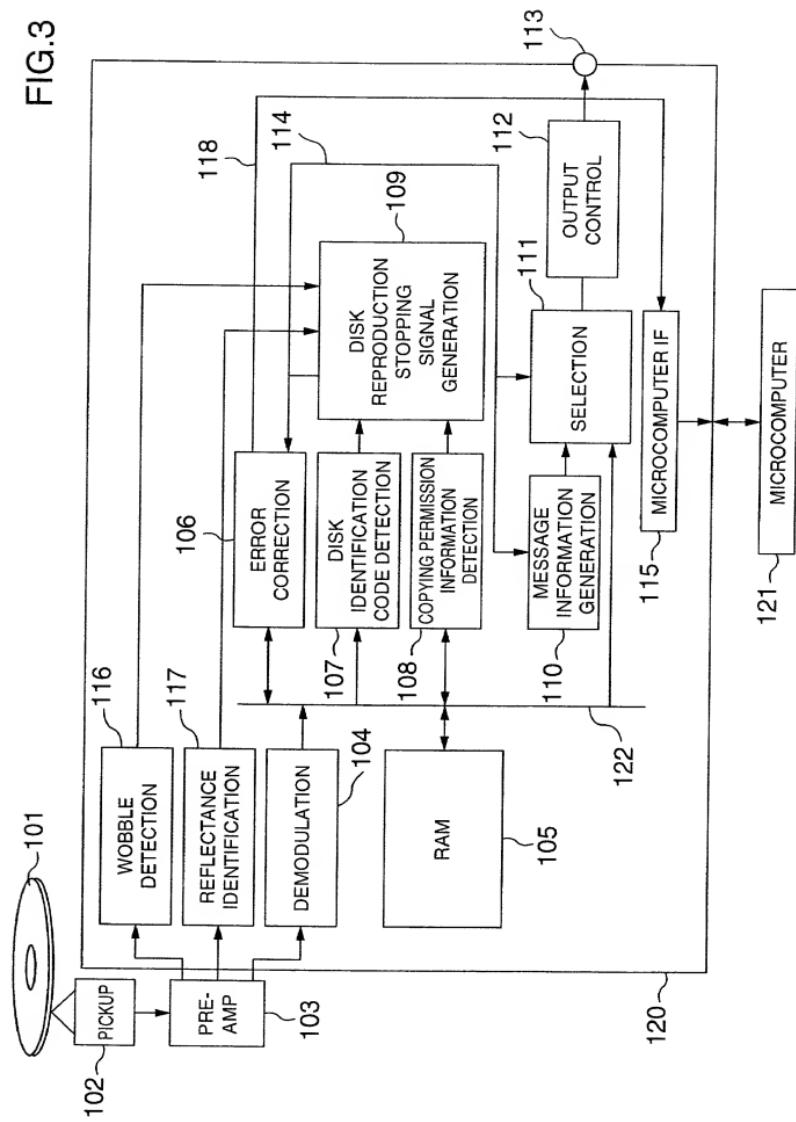
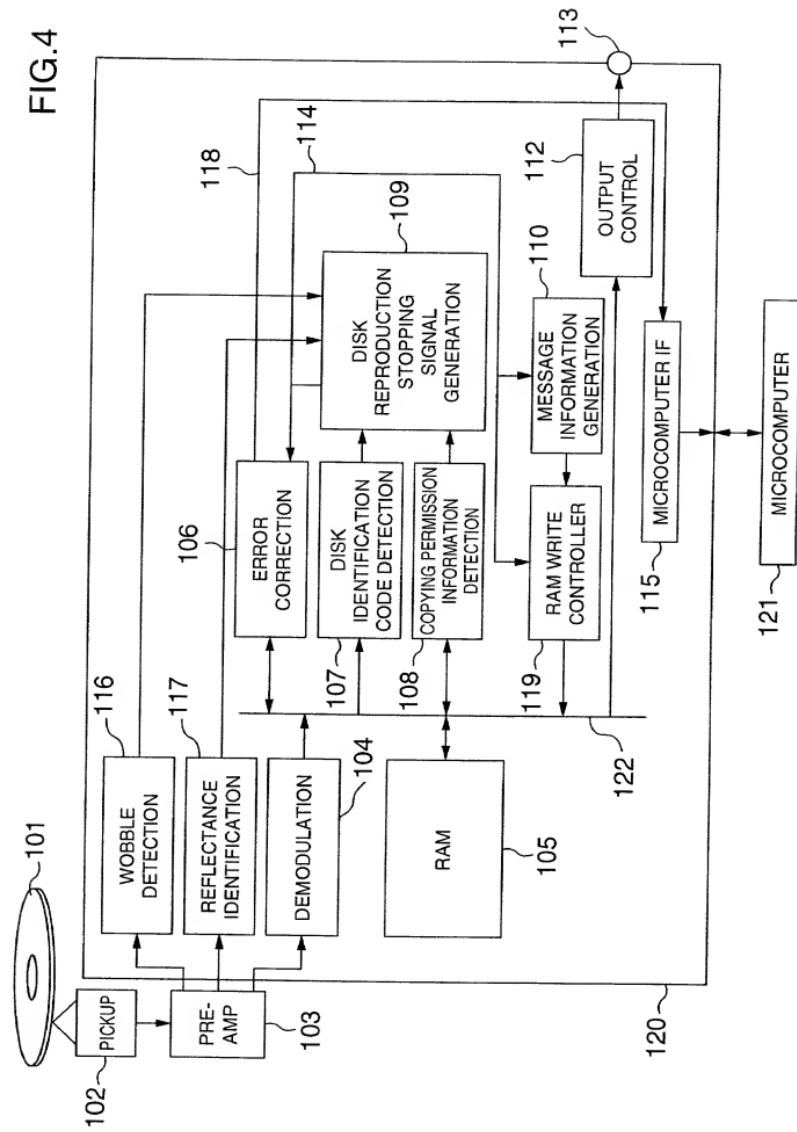


FIG.4



Copy

DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below named inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name, I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

"REPRODUCTION APPARATUS AND REPRODUCTION METHOD OF DIGITAL**VIDEO SIGNAL OR AUDIO SIGNAL"**

the specification of which (check one)

is attached hereto.

was filed on _____
as Application Serial No. _____
and was amended on _____
(if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, §1.56(a).

I hereby claim foreign priority benefits under Title 35, United States Code, §119 of any foreign application(s) for patent or inventor's certificate listed below and have also identified below any foreign application for patent or inventor's certificate having a filing date before that of the application on which priority is claimed:

Prior Foreign Application(s)

Priority Claimed

10-102385 (Number)	Japan (Country)	14 April, 1998 (Day/Month/Year Filed)	<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____ (Number)	_____ (Country)	_____ (Day/Month/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No

I hereby claim the benefit under Title 35, United States Code, §120 of any United States application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose material information as defined in Title 37, Code of Federal Regulations, §1.56(a) which occurred between the filing date of the prior application and the national or PCT international filing date of this application:

(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)
(Application Serial No.)	(Filing Date)	(Status: patented, pending, abandoned)

(Continued on Page 2)

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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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